

25X1

November 8, 1971

0191 DA

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BBB

25X1

Box 8031, Southwest Station
Washington D.C. 20024

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When [] and I were visiting you last Thursday, you posed a question about why you perceived so little increase in brightness as a result of raising the luminance of your microscopic object ten times.

I discussed this question with [] here, who is an authority on visual problems. He did not appear at all surprised at the question, and stated that the eye adapts so rapidly that a change in object luminance by ten times might well be scarcely apparent to the average eye. However, and this is the important part, the ability of the eye to perform visual tasks is greatly improved by an increase in luminance, and you can therefore rest assured that you will be able to achieve better resolution and better contrast discrimination with the increased object luminance, even though it appears to be only a little brighter than before.

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[] felt that the change in color of the illuminant from the blue fluorescent tube to a yellowish tungsten lamp would not contribute significantly to the situation.

I hope these few comments will be of value to you.

Sincerely,

25X1

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MEMORANDUM FOR: C/REB *td*

Tom,
you might find this
information useful. Recall
our conversations on the
tracking light source.
R

(DATE)

FORM NO. 101 REPLACES FORM 10-101
1 AUG 54 WHICH MAY BE USED.

(47)

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HILS DATA

Long Minimum ^{Average image} brightness 25 f1 - 35 f1

- ① Office Work RES Recommended brightness 50-100 f1?
 ② Fine work 100-300 f1?

- ① ② Hamburg from memory - should be verified
 Reflectance paper 60-80%
 Effective brightness at eye
 ① 40-80 f1
 ② 60-240 f1

With 3000 f1 Table brightness

~~Transmission of~~

Optics Transmission	FOV Density	0.1	1.0	2.0
.50		1125	150	15
.10		225	30	3

	With 30,000 f1	Table	Brightness
0.5	11,250	1500	150
.10	2250	300	30

With 150,000 f1 Table brightness

	0.5	.10
0.5	12,500	1500
.10	2500	300

Conclusions
30,000 F1 should be adequate for most
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